# RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: _09/875,456B_
Source: _1Fw16_
Date Processed by STIC: _12/6/04_

# *ENTERED*

IFW16

RAW SEQUENCE LISTING          DATE: 12/06/2004
PATENT APPLICATION:  **US/09/875,456B**          TIME: 14:21:34

        Input Set : **A:\ORT1448.ST25.txt**
        Output Set: **N:\CRF4\12062004\I875456B.raw**

```
  2 <110> APPLICANT: Qin, Ning
  3        Codd, Ellen
  4        D'Andrea, Michael
  6 <120> TITLE OF INVENTION: HUMAN VOLTAGE GATED SODIUM CHANNEL BETA 1A SUBUNIT AND
THODS OF
  7        USE
->  8 <130> FILE REFERENCE: ORT-1448
->  9 <140> CURRENT APPLICATION NUMBER: 09/875,456B
 10 <141> CURRENT FILING DATE: 2001-06-06
-> 11 <160> NUMBER OF SEQ ID: 16
 12 <170> SOFTWARE: PatentIn version 3.3
-> 13 <210> SEQ ID NO: 1
 14 <211> LENGTH: 27
 15 <212> TYPE: DNA
 16 <213> ORGANISM: Artificial
-> 17 <220> FEATURE:
 18 <223> OTHER INFORMATION: Oligonucleotide primer
-> 19 <400> SEQUENCE: 1
 20 ccatcctaat acgactcact atagggc                          27
 21 <210> SEQ ID NO: 2
 22 <211> LENGTH: 25
 23 <212> TYPE: DNA
 24 <213> ORGANISM: Artificial
-> 25 <220> FEATURE:
 26 <223> OTHER INFORMATION: Oligonucleotide primer
-> 27 <400> SEQUENCE: 2
 28 tggaccttcc gccagaaggg cactg                            25
 29 <210> SEQ ID NO: 3
 30 <211> LENGTH: 24
 31 <212> TYPE: DNA
 32 <213> ORGANISM: Artificial
-> 33 <220> FEATURE:
 34 <223> OTHER INFORMATION: Oligonucleotide primer
-> 35 <400> SEQUENCE: 3
 36 ctggaggagg atgagcgctt cgag                             24
 37 <210> SEQ ID NO: 4
 38 <211> LENGTH: 21
 39 <212> TYPE: DNA
 40 <213> ORGANISM: Artificial
-> 41 <220> FEATURE:
 42 <223> OTHER INFORMATION: Oligonucleotide primer
-> 43 <400> SEQUENCE: 4
 44 ctattcggcc acctggacgc c                                21
 45 <210> SEQ ID NO: 5
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RAW SEQUENCE LISTING                    DATE: 12/06/2004
PATENT APPLICATION:   US/09/875,456B      TIME: 14:21:34

Input Set : A:\ORT1448.ST25.txt
Output Set: N:\CRF4\12062004\I875456B.raw

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    46 <211> LENGTH: 18
    47 <212> TYPE: DNA
    48 <213> ORGANISM: Artificial
->  49 <220> FEATURE:
    50 <223> OTHER INFORMATION: Oligonucleotide primer
->  51 <400> SEQUENCE: 5
    52 gtgtctgaga tcatgatg                                        18
    53 <210> SEQ ID NO: 6
    54 <211> LENGTH: 30
    55 <212> TYPE: DNA
    56 <213> ORGANISM: Artificial
->  57 <220> FEATURE:
    58 <223> OTHER INFORMATION: Oligonucleotide primer
->  59 <400> SEQUENCE: 6
    60 gccatgggga ggctgctggc cttagtggtc                           30
    61 <210> SEQ ID NO: 7
    62 <211> LENGTH: 20
    63 <212> TYPE: DNA
    64 <213> ORGANISM: Artificial
->  65 <220> FEATURE:
    66 <223> OTHER INFORMATION: Oligonucleotide primer
->  67 <400> SEQUENCE: 7
    68 gtgtgcctgc agctgctcaa                                      20
    69 <210> SEQ ID NO: 8
    70 <211> LENGTH: 14
    71 <212> TYPE: PRT
    72 <213> ORGANISM: Artificial
->  73 <220> FEATURE:
    74 <223> OTHER INFORMATION: Synthetic Construct
->  75 <400> SEQUENCE: 8
    76 Arg Trp Arg Asp Arg Trp Gln Ala Val Asp Arg Thr Gly Cys
    77 1               5                   10
    78 <210> SEQ ID NO: 9
    79 <211> LENGTH: 13
    80 <212> TYPE: PRT
    81 <213> ORGANISM: Artificial
->  82 <220> FEATURE:
    83 <223> OTHER INFORMATION: Synthetic Construct
->  84 <400> SEQUENCE: 9
    85 Cys Val Pro His Arg Arg Ser Gly Tyr Arg Thr Gln Leu
    86 1               5                   10
    87 <210> SEQ ID NO: 10
    88 <211> LENGTH: 18
    89 <212> TYPE: DNA
    90 <213> ORGANISM: Artificial
->  91 <220> FEATURE:
    92 <223> OTHER INFORMATION: Oligonucleotide primers for Northern blot analysis
->  93 <400> SEQUENCE: 10
    94 tcaaagcatg cctgtccc                                        18
```

RAW SEQUENCE LISTING          DATE: 12/06/2004
PATENT APPLICATION:  US/09/875,456B     TIME: 14:21:34

Input Set : **A:\ORT1448.ST25.txt**
Output Set: **N:\CRF4\12062004\I875456B.raw**

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 95 <210> SEQ ID NO: 11
 96 <211> LENGTH: 19
 97 <212> TYPE: DNA
 98 <213> ORGANISM: Artificial
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W--> `99 <220> FEATURE:`
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100 <223> OTHER INFORMATION: Oligonucleotide primers for Northern blot analysis
```
W--> `101 <400> SEQUENCE: 11`
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102 tcaaaccaca ccccggaaa                                              19
103 <210> SEQ ID NO: 12
104 <211> LENGTH: 807
105 <212> TYPE: DNA
106 <213> ORGANISM: Homo sapiens
```
W--> `107 <400> SEQUENCE: 12`
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108 atggggaggc tgctggcctt agtggtcggc gcggcactgg tgtcctcagc ctgcgggggc    60
109 tgcgtggagg tggactcgga gaccgaggcc gtgtatggga tgaccttcaa aattctttgc   120
110 atctcctgca agcgccgcag cgagaccaac gctgagacct tcaccgagtg gaccttccgc   180
111 cagaagggca ctgaggagtt tgtcaagatc ctgcgctatg agaatgaggt gttgcagctg   240
112 gaggaggatg agcgcttcga gggccgcgtg gtgtggaatg gcagccgggg caccaaagac   300
113 ctgcaggatc tgtctatctt catcaccaat gtcacctaca accactcggg cgactacgag   360
114 tgccacgtct accgcctgct cttcttcgaa aactacgagc acaacaccag cgtcgtcaag   420
115 aagatccaca ttgaggtagt ggacaaaggt gagtcgggtg ctgcctgccc ctttaccgtc   480
116 acccaccgga gagccagatg gagggacaga tggcaggcag tggacaggac aggctggctc   540
117 tgtgcctggc cagccaaccg cccacagcag cgggctgagg gggaggggag cagcccctcc   600
118 tgcccactcc agctctggcc tctgtttctc tccagcccac ggagaggtca aagcatgcct   660
119 gtcccccaca gacgctccgg gtacagaacc cagctctgtc acctgtgctg tatgacctct   720
120 ggcaggtgcc ttctgtctct gagccaaagg gttgtcctgg gcttgcccgg gataataatc   780
121 cgatgtgttt ctcggggtgt ggtttga                                      807
122 <210> SEQ ID NO: 13
123 <211> LENGTH: 974
124 <212> TYPE: DNA
125 <213> ORGANISM: Homo sapiens
```
W--> `126 <400> SEQUENCE: 13`
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127 gccatgggga ggctgctggc cttagtggtc ggcgcggcac tggtgtcctc agcctgcggg    60
128 ggctgcgtgg aggtggactc ggagaccgag gccgtgtatg ggatgacctt caaaattctt   120
129 tgcatctcct gcaagcgccg cagcgagacc aacgctgaga ccttcaccga gtggaccttc   180
130 cgccagaagg gcactgagga gtttgtcaag atcctgcgct atgagaatga ggtgttgcag   240
131 ctggaggagg atgagcgctt cgagggccgc gtggtgtgga atggcagccg gggcaccaaa   300
132 gacctgcagg atctgtctat cttcatcacc aatgtcacct acaaccactc gggcgactac   360
133 gagtgccacg tctaccgcct gctcttcttc gaaaactacg agcacaacac cagcgtcgtc   420
134 aagaagatcc acattgaggt agtggacaaa ggtgagtcgg gtgctgcctg cccctttacc   480
135 gtcacccacc ggagagccag atggagggac agatggcagg cagtggacag gacaggctgg   540
136 ctctgtgcct ggccagccaa ccgcccacag cagcgggctg aggggggaggg gagcagcccc   600
137 tcctgcccac tccagctctg gcctctgttt ctctccagcc cacggagagg tcaaagcatg   660
138 cctgtccccc acagacgctc cgggtacaga acccagctct gtcacctgtg ctgtatgacc   720
139 tctggcaggt gccttctgtc tctgagccaa agggttgtcc tgggcttgcc cgggataata   780
140 atccgatgtg tttctcgggg tgtggtttga gccattcttc catcatgggg ttcatgagga   840
141 ttgagcagct gcaggcacac cctggcttcc agcagagcct tgcaggtggt ggcgagggtg   900
142 gcggttctta ctgttgagta gctcagccct gctgctctct gtggtgatga ggcaagagag   960
143 cgtgcctgtg ttgg                                                    974
```

```
     144 <210> SEQ ID NO: 14
     145 <211> LENGTH: 268
     146 <212> TYPE: PRT
     147 <213> ORGANISM: Homo sapiens
W--> 148 <400> SEQUENCE: 14
     149 Met Gly Arg Leu Leu Ala Leu Val Val Gly Ala Ala Leu Val Ser Ser
     150 1               5                   10                  15
     151 Ala Cys Gly Gly Cys Val Glu Val Asp Ser Glu Thr Glu Ala Val Tyr
     152             20                  25                  30
     153 Gly Met Thr Phe Lys Ile Leu Cys Ile Ser Cys Lys Arg Arg Ser Glu
     154         35                  40                  45
     155 Thr Asn Ala Glu Thr Phe Thr Glu Trp Thr Phe Arg Gln Lys Gly Thr
     156     50                  55                  60
     157 Glu Glu Phe Val Lys Ile Leu Arg Tyr Glu Asn Glu Val Leu Gln Leu
     158 65                  70                  75                  80
     159 Glu Glu Asp Glu Arg Phe Glu Gly Arg Val Val Trp Asn Gly Ser Arg
     160                 85                  90                  95
     161 Gly Thr Lys Asp Leu Gln Asp Leu Ser Ile Phe Ile Thr Asn Val Thr
     162             100                 105                 110
     163 Tyr Asn His Ser Gly Asp Tyr Glu Cys His Val Tyr Arg Leu Leu Phe
     164         115                 120                 125
     165 Phe Glu Asn Tyr Glu His Asn Thr Ser Val Val Lys Lys Ile His Ile
     166         130                 135                 140
     167 Glu Val Val Asp Lys Gly Glu Ser Gly Ala Ala Cys Pro Phe Thr Val
     168 145                 150                 155                 160
     169 Thr His Arg Arg Ala Arg Trp Arg Asp Arg Trp Gln Ala Val Asp Arg
     170                 165                 170                 175
     171 Thr Gly Trp Leu Cys Ala Trp Pro Ala Asn Arg Pro Gln Gln Arg Ala
     172             180                 185                 190
     173 Glu Gly Glu Gly Ser Ser Pro Ser Cys Pro Leu Gln Leu Trp Pro Leu
     174             195                 200                 205
     175 Phe Leu Ser Ser Pro Arg Arg Gly Gln Ser Met Pro Val Pro His Arg
     176         210                 215                 220
     177 Arg Ser Gly Tyr Arg Thr Gln Leu Cys His Leu Cys Cys Met Thr Ser
     178 225                 230                 235                 240
     179 Gly Arg Cys Leu Leu Ser Leu Ser Gln Arg Val Val Leu Gly Leu Pro
     180             245                 250                 255
     181 Gly Ile Ile Ile Arg Cys Val Ser Arg Gly Val Val
     182             260                 265
     183 <210> SEQ ID NO: 15
     184 <211> LENGTH: 273
     185 <212> TYPE: PRT
     186 <213> ORGANISM: Rattus sp.
W--> 187 <400> SEQUENCE: 15
     188 Met Gly Thr Leu Leu Ala Leu Val Val Gly Ala Val Leu Val Ser Ser
     189 1               5                   10                  15
     190 Ala Trp Gly Gly Cys Val Glu Val Asp Ser Glu Thr Glu Ala Val Tyr
     191             20                  25                  30
     192 Gly Met Thr Phe Lys Ile Leu Cys Ile Ser Cys Lys Arg Arg Ser Glu
```

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PATENT APPLICATION:  US/09/875,456B      TIME: 14:21:34

Input Set : A:\ORT1448.ST25.txt
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```
193          35                40                45
194 Thr Thr Ala Glu Thr Phe Thr Glu Trp Thr Phe Arg Gln Lys Gly Thr
195     50                55                60
196 Glu Glu Phe Val Lys Ile Leu Arg Tyr Glu Asn Glu Val Leu Gln Leu
197 65                70                75                80
198 Glu Glu Asp Glu Arg Phe Glu Gly Arg Val Val Trp Asn Gly Ser Arg
199             85                90                95
200 Gly Thr Lys Asp Leu Gln Asp Leu Ser Ile Phe Ile Thr Asn Val Thr
201             100               105               110
202 Tyr Asn His Ser Gly Asp Tyr Glu Cys His Val Tyr Arg Leu Leu Phe
203         115               120               125
204 Phe Asp Asn Tyr Glu His Asn Thr Ser Val Val Lys Lys Ile His Leu
205     130               135               140
206 Glu Val Val Asp Lys Gly Lys Trp Ser Leu Val Thr Leu Trp Gln Ala
207 145               150               155               160
208 Arg Trp Arg Asp Arg Trp Lys Glu Gly Asp Arg Leu Val Ser His Arg
209             165               170               175
210 Gly Gln Leu Thr Pro Arg Ser His Arg Gly Lys Asp Thr Pro Phe Leu
211             180               185               190
212 Val Leu Glu Thr Ser Ala Leu Gln His Thr Gly Gly Gln Ile Arg Thr
213         195               200               205
214 Pro Thr Pro Pro Pro Thr Asn Gly Met Cys Ile Gly Leu His Ser Cys
215     210               215               220
216 Cys Val Thr Ser Asp Gly Cys Ile Pro Ile Ser Glu Pro Gln Ala Cys
217 225               230               235               240
218 Pro Gln Gly Pro Glu Arg Ile Phe Cys Met Ala Cys Cys Val Ser Gln
219             245               250               255
220 Ala Gly Pro His Trp Arg Asp Val Gly Thr Tyr Leu Arg Pro Gln Trp
221             260               265               270
222 Glu
224 <210> SEQ ID NO: 16
225 <211> LENGTH: 218
226 <212> TYPE: PRT
227 <213> ORGANISM: Homo sapiens
228 <400> SEQUENCE: 16
229 Met Gly Arg Leu Leu Ala Leu Val Val Gly Ala Ala Leu Val Ser Ser
230 1           5                 10                15
231 Ala Cys Gly Gly Cys Val Glu Val Asp Ser Glu Thr Glu Ala Val Tyr
232             20                25                30
233 Gly Met Thr Phe Lys Ile Leu Cys Ile Ser Cys Lys Arg Arg Ser Glu
234         35                40                45
235 Thr Asn Ala Glu Thr Phe Thr Glu Trp Thr Phe Arg Gln Lys Gly Thr
236     50                55                60
237 Glu Glu Phe Val Lys Ile Leu Arg Tyr Glu Asn Glu Val Leu Gln Leu
238 65                70                75                80
239 Glu Glu Asp Glu Arg Phe Glu Gly Arg Val Val Trp Asn Gly Ser Arg
240             85                90                95
241 Gly Thr Lys Asp Leu Gln Asp Leu Ser Ile Phe Ile Thr Asn Val Thr
242             100               105               110
```

W--> 228 <400> SEQUENCE: 16

RAW SEQUENCE LISTING ERROR SUMMARY      DATE: 12/06/2004
PATENT APPLICATION:   **US/09/875,456B**      TIME: 14:21:35

Input Set : **A:\ORT1448.ST25.txt**
Output Set: **N:\CRF4\12062004\I875456B.raw**

**Invalid <213> Response:**
**Use of "Artificial" only as "<213> Organism" response is incomplete,**
**per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.**

Seq#:1,2,3,4,5,6,7,8,9,10,11

**VERIFICATION SUMMARY**               DATE: 12/06/2004
PATENT APPLICATION:  **US/09/875,456B**       TIME: 14:21:35

        Input Set : **A:\ORT1448.ST25.txt**
        Output Set: **N:\CRF4\12062004\I875456B.raw**

L:8 M:283 W: Missing Blank Line separator, <130> field identifier
L:9 M:283 W: Missing Blank Line separator, <140> field identifier
L:11 M:283 W: Missing Blank Line separator, <160> field identifier
L:13 M:283 W: Missing Blank Line separator, <210> field identifier
L:17 M:283 W: Missing Blank Line separator, <220> field identifier
L:19 M:283 W: Missing Blank Line separator, <400> field identifier
L:25 M:283 W: Missing Blank Line separator, <220> field identifier
L:27 M:283 W: Missing Blank Line separator, <400> field identifier
L:33 M:283 W: Missing Blank Line separator, <220> field identifier
L:35 M:283 W: Missing Blank Line separator, <400> field identifier
L:41 M:283 W: Missing Blank Line separator, <220> field identifier
L:43 M:283 W: Missing Blank Line separator, <400> field identifier
L:49 M:283 W: Missing Blank Line separator, <220> field identifier
L:51 M:283 W: Missing Blank Line separator, <400> field identifier
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L:59 M:283 W: Missing Blank Line separator, <400> field identifier
L:65 M:283 W: Missing Blank Line separator, <220> field identifier
L:67 M:283 W: Missing Blank Line separator, <400> field identifier
L:73 M:283 W: Missing Blank Line separator, <220> field identifier
L:75 M:283 W: Missing Blank Line separator, <400> field identifier
L:82 M:283 W: Missing Blank Line separator, <220> field identifier
L:84 M:283 W: Missing Blank Line separator, <400> field identifier
L:91 M:283 W: Missing Blank Line separator, <220> field identifier
L:93 M:283 W: Missing Blank Line separator, <400> field identifier
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L:101 M:283 W: Missing Blank Line separator, <400> field identifier
L:107 M:283 W: Missing Blank Line separator, <400> field identifier
L:126 M:283 W: Missing Blank Line separator, <400> field identifier
L:148 M:283 W: Missing Blank Line separator, <400> field identifier
L:187 M:283 W: Missing Blank Line separator, <400> field identifier
L:228 M:283 W: Missing Blank Line separator, <400> field identifier